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ABSTRACT

Suggesting that the concept of structure employed by political scientists in the analysis of belief systems is inadequate and misleading, the paper discusses Jean Piaget's concept of egocentrism as a theoretical alternative to belief systems analysis. The purpose of the paper is to provide political scientists with a short but comprehensive summary and introduction to Piaget's theory of cognitive development. The first part argues that current measures which, for example, analyze the degree to which respondents' beliefs conform to traditional ideologies (such as liberalism or conservatism) are measures of belief content rather than belief structure. This section demonstrates the weakness of constraint as a measure of structure. The second section, the major portion of the document, presents Piaget's concept of egocentrism. The section's emphasis is that the individual's belief structure is provided by the cognitive system of the mind. Topics include Piaget's "Genetic Epistemology" as the key to the structure of belief systems and egocentrism as the mainspring of genetic epistemology. Specifically, the discussion involves infantile, pre-operatory, concrete operational, and formal operational stages and cooperation as opposed to egocentrism. The final section offers both long-term and short-term methods for incorporating Piaget's theories into political science research. (KC)

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GENETIC EPISTEMOLOGY AND THE STRUCTURE OF BELIEF SYSTEMS: AN INTRODUCTION TO PIAGET FOR POLITICAL SCIENTISTS

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ABSTRACT

This paper begins by arguing that the concept of structure employed by political scientists in the analysis of belief systems (i.e., "constraint") is wholly inadequate and misleading. Further, it is argued that constraint is largely a measure of ideological content and that its contined use only inhibits a truly structural analysis of belief systems.

The middle section of the paper presents a theoretical alternative to constraint. That alternative is Piaget's concept of egocentrism. The basics of Piaget's system are outlined and the role of egocentrism in that system is detailed. The main purpose of the paper is to provide political scientists with access to a relatively short, but comprehensive, summary and introduction to Piaget's theory of cognitive development.

The final section of the paper provides guidelines and suggestions for operationalizing the concept of egocentrism in order to provide a valid measure of structure in the analysis of belief systems.

INTRODUCTION

Our capacity to understand politics is directly determined by the adequacy of the concepts at our command. Inadequate and ambiguous concepts produce inadequate and ambiguous research. It is therefore incumbent upon us to continually confront even our most basic concepts to determine the extent to which those concepts remain useful or can be improved. Indeed, the development of whole fields of inquiry can be retarded by failure to periodically examine the basic tools of research--concepts.

In the case of belief systems, the most serious impediment to understanding their role in the political process is the prevailing concept of "structure" found in the political science literature. The issue of the structure of belief systems has played a prominent role in political science at least for the last two decades.[1] Recently the issue of structure was revived,[2] and our journals continue to be "revisited" by the debate.[3] In psychology, the structure of belief systems has been debated even longer than in political science with some of that debate, most notably around The Authoritarian Personality (Adorno, et.al., 1950), spilling over into political science.[4] For the most part, however, political science has been relatively insulated from the psychological approach to the structure of beliefs.[5] This insulation is manifest by the fact that while there is virtual universal agreement that structure is a cognitive component of belief systems, the only "cognitive" measure used with any frequency in political science is level of education.[6] Instead of cognitive measures, the

"bread and butter" (Loye, 1977, p. 54.) measure of structure is the degree to which respondents' beliefs conform to traditional ideologies such as liberalism and conservatism.

The argument developed herein is that such ideological congruity, or "constraint", is a measure of content, not a measure of structure, and Piaget's concept of egocentrism is the appropriate concept to be operationalized as a measure of structure. It is suggested that the term "structure" be reserved for studies which employ cognitive measures, while studies which employ measures of constraint should be limited to analyses of the content of belief systems. In what follows I begin by demonstrating the weakness of constraint as a measure of structure. I then move on to a thorough presentation of Piaget's concept of egocentrism, ending with suggestions on how to operationalize egocentrism in order to analyze the structure of political beliefs.

CONSTRAINT UNRAVELED

The debate over the structure of political beliefs has generated a wide-ranging and voluminous literature since the publication of The American Voter (Campbell, et. al., 1960) and Political Ideology (Lane, 1962).[7] A good deal of that debate was over questions of methodology and that aspect of the debate has certainly augmented our methodological sophistication as well as our appreciation of the need for multiple methodologies.[8] Less attention has been paid, however, to the underlying theory which links ideological constraint to cognitive structure. Rather than recapitulate the methodological

debate, I intend to demonstrate the theoretical inadequacy of the linkage between constraint and structure.

There, of course, will always be a less than ideal fit between theoretical constructs and their corresponding operationalized measures. The question is, when do the inadequacies of the measures too narrowly restrict the boundaries within which explanation can be meaningful? I shall argue that while educational level, as a measure of cognitive capacity, remains within the boundaries of meaningful explanation, constraint, as a measure of structure, can produce only distorted explanations. The case for "educational level" as an indirect measure of "cognitive capacity", while nowhere near the ideal of a direct scale, is at least understandable and acceptable as long as it remains clear that the measure is limited, indirect, and approximate. The case for constraint as the operationalization of structure, however, is so manifestly unfounded and theoretically misleading that it is a wonder that its flame has yet to die out. Perhaps the reason constraint has not been extinguished as the measure of structure is that an adequate alternative has yet to be developed.[9] Even without such an alternative, however, it hardly makes sense to continue spending money and consuming journal space with studies of the "structure" of beliefs, if the "findings" are ultimately uninterpretable.

To be clear, I am by no means saying that it is inappropriate to study the degree to which public opinion has become more or less <u>ideological</u>. That is a perfectly legitimate, important and interesting endeavor. What I am saying is that the ideological nature of beliefs is a completely <u>separate</u> question from the structure of beliefs.

The continued equation of ideological constraint and structure only blocks the exploration of structural questions. Ideological constraint and the structure of beliefs are two separate questions because two individuals might correspond exactly in their political self-identifications and their positions on any number of issues, but the structures supporting those identifications and positions could be diametrically opposed. For example, one individual might be a leader with a highly abstract, flexible, operatory cognitive structure, while the second individual might be a follower with an imitative, concrete, and rigid cognitive structure. In short, the same liberal, conservative, socialist or any other ideological orientation can be cognitively structured in a variety of ways. Consequently, any attempt to link ideological constraint to cognitive capacity can only result in confusion. The source of this confusion is the fact that constraint is demonstrably and theoretically linked to both cognitively complex and cognitively simple belief systems.[10]

Let us begin unraveling the equation of constraint with structure by looking at an already well established criticism. Both Lane (1974) and Bennett (1975) have convincingly shown that in large part the repeated finding of differences in the structure of elite and mass belief systems is an artifact of the way constraint is defined:

> "First, there has been a tendency to view the purported mode of belief organization among elites as the only meaningful way to organize beliefs. This makes the...argument both transparent and tautological. Secondly, the perceived exclusivity of universal dimensions of judgment has led investigators to measure attitude constraint in the mass public in such a way that other modes of attitude and belief organization would not be detected even if they existed. (Bennett, 1975, p. 9.)

and,

> "The mistake underlying reliance on the constraints implied by statistical clustering, scalar ordering, or acceptance of an idea cluster by an authoritative elite is based on the fallacious view that if some people see idea elements properly clustering in a certain way, others should too. Such 'constraints' or clusterings refer to neither logic nor rationality." (Lane, 1974, p. 103.)

For example, someone who viewed himself on the extreme left of the political spectrum might argue in favor of disarmament, reduced arms sales to third world countries, and military aid for the Afghan insurgents. Such a configuration might appear as a virtually random organization of beliefs, but in fact the three positions are compatible if the individual also subscribes to just war theory (e.g., Walzer, 1977) and principles of self-determination. The point here is that unless we know the justifications for each position, we have no way of determining the relationship of one element of belief to another. There simply is no single logic, but a set of logics, as Godel (1931) pointed out half a century ago. Pre-determining a single blueprint for "what goes with what" (Converse, 1964, p. 212) necessarily reduces the likelihood of discovering "structured" belief systems. The proper question is not "What goes with what?", but how does what go with what? In short, if we are ever to advance to a structural analysis of belief systems, the focus must be on the connectors, not on what is connected.

A second inadequacy of constraint as the operationalized measure of structure is that, at best, constraint corresponds to only one of the many cognitive operations which produce a structured belief

system. That operation, of course, is class inclusion. The set of liberal and conservative beliefs which are constrained are simply particular members of the general class of liberalism or conservatism. That class can be structured in many different ways as we have already seen. The point here is that the cognitive operations which produce a structured belief system are far more numerous, and in many ways for more important (at least in terms of their potential impact on political behavior), than mere class inclusion. For example, Piaget held reversibililty to be among the last and most critical cognitive operations to develop. The development of reversibility marks the watershed between concrete and operatory thought. In the political sphere an individual can hold a set of liberal beliefs which are either concrete or operatory, but that structure could not be detected simply by ascertaining the presence or absence of particular issue positions. One would have to determine whether or not the individual can move from general principles to particular applications and back again before a judgment could be made on the nature of the belief structure. Such reversibility, then, is essential to a structural analysis. Other types of cognitive operations (besides class inclusion and reversibility) that certainly ought to be included in a structural analysis of ideology are differentiation, identity, causality, seriation, transitivity, role-taking, and perhaps even conservation. Again, the point is that by limiting the concept of structure to class inclusion we have too narrowly constricted the cognitive foundation upon which the structure of a belief system is built.[11] We have thereby closed off vast areas of further research.

A third inadequacy related to the use of constraint as the operationalization of structure is that by linking "structure" to this single ideological dimension we have foreclosed the possibility of cross-cultural research. This is a serious deficiency since cross-cultural research is most likely to reveal the factors which influence the development of belief systems. This inadequacy can be readily seen if we imagine the problems one would encounter in trying to compare the "structure" of beliefs in the U.S. with the structure of beliefs in Nepal, Chad and Peru. Even if we were able to overcome problems of translation and question wording we could hardly be certain that liberalism and conservatism (or any other content based measure) mean the same things in these diverse cultures or are even relevant to the cultural context. Nepal is a particularly telling example insofar as the "traditional" ideology varies according to one's proximity to the Indian and Tibetan borders. The problem here is that the concept of structure becomes culture bound when limited to ideologies deriving from particular historical experiences. Cross-cultural comparisons of the "structure" of belief systems using constraint as the measure of structure are limited to those cultures with the relevant historical experience. Insofar as the structure of belief systems is rooted in cognitive functioning, and insofar as the parameters of cognitive functioning are genetically, not culturally, determined,[12] the measures used to tap structure must be universally applicable.

A fourth, related, problem with constraint as a measure of structure, is that it is time bound. Since what are constrained are elements

of pre-existing ideological systems, even if in addition to liberalism and conservatism measures of constraint for all known ideologies were developed, we would still be unable to recognize any newly developing ideological systems. Constraint is past, rather than future, oriented, and its use, therefore, is limited further.

The culture and time boundedness of constraint lead to a fifth criticism which on its own should have sounded the death knoll of the equation, constraint equals structure. This criticism grew out of the debate over The Authoritarian Personality, and emphasizes the necessity of approaching the structure of belief systems with methods which are free of any political content. Rokeach noted in his introduction to The Open and Closed Mind (1960) that "a first requirement, it seems to us, is to make a sharp distinction between the structure and the content of ideological systems." (p. 14.) It is precisely this "first requirement" that the discipline of political science has yet to meet. Just as the observation that no ideology is immune to "party-line thinking" has become a part of the discipline's stock in trade, we must now move to incorporate the corollary to that observation and recognize the necessity of sharply distinguishing between what we mean by structure and what we mean by content. The former can only be discovered by asking "how?", while the latter is a question of "what?".

Although the necessity of this "first requirement" applied originally to studies of authoritarianism, I argue that any study purporting to deal with the structure of beliefs must separate structure from content, just as we must separate dependent from independent variables.

As Rokeach noted in relation to studies of authoritarianism, holding all the "correct" liberal, anti-McCarthy, anti-racist, pro-Jewish beliefs does not automatically make a person non-authoritarian, for those beliefs can be held in an authoritarian manner. Again, the issue is not what is believed, but how it is believed.

Even more crucial, however, is that unless such a separation is made, it is virtually impossible to avoid tautology in any empirical description of the functional relationships between the content and the structure of a belief system. To use a well known proposition (from The Changing American Voter, Nie, et. al., 1976), suppose we wanted to know whether or not a change in the content of a belief system produces a change in its structure. If content and structure have not been operationalized such that they are clearly separate, then we would no more be able to determine their relationship than we would be under any circumstances in which dependent and independent variables were confounded. Under such circumstances, a change in content must produce at least a partial change in structure simply as a function of the definition of the terms.

The last point to be made by way of constraint's obituary is that the way structure has been defined in political science produces false, misleading interpretations which fly in the face of what we know about the nature of cognitive functioning in general. Perhaps the two most discussed issues pertaining to the question of structure in the political science literature are 1) the relationship between political activity and cognitive structure, and 2) the different belief structures found among elites and followers. In both cases

interpretive conclusions are based on measures of constraint, and in both cases increased constraint is interpreted as an indication of more structured belief systems.

Since increased constraint really means an increase in conformity to traditional ideologies, the real question is what produces this conformity. From the cognitive point of view, such conformity can be purchased in at least two different ways. One way is simply the appropriate exercise of class inclusion, an exercise which correctly subsumes particular liberal or conservative positions under the appropriate ideological class. That is, of course, just as political scientists have interpreted increased constraint. The "costs" involved here are appropriate knowledge of the particular issues and the underlying ideological principals, as well as the incentive to identify oneself with the particular issues and the general ideology. The second way to purchase conformity, however, is completely at odds with the first and has been virtually ignored in the analysis of aggregate data by those who employ constraint as a measure of structure. The second way to achieve greater ideological conformity is by relying on authoritative others to provide the constraint "free of charge". That is, constraint can increase without any knowledge of particular issues and their relationship to general principles, or without any individual identification with the issues or principles. All that is required is an identification with an appropriate ideological authority and the "ability" to parrot the issue positions of that authority. Since a correlate of less developed cognitive systems is unilateral respect for authority,[13] the likelihood of such an

identification with authority is quite high among those with less developed cognitive systems. Hence, increased constraint can be interpreted as either more, or less cognitive sophistication, or both. Thus, the expected relationship between cognition and constraint, as Bennett pointed out (1975, pp. 34-36), is not a linear relationship, but a curvilinear relationship which produces a "lazy J". Therefore, Nie, Verba and Petrocik's conclusion that the American electorate possessed more structured belief systems in the 70's than in the 50's must be greeted with a resounding "maybe".

THE OBITUARY

In summary, constraint is essentially a measure of ideological content. As a measure of structure, constraint is time and culture bound, can only tap the presence or absence of pre-determined ideologies at best measures only one cognitive operation, and completely fails to meet the "first requirement" of a structural analysis: the sharp distinction between the structure and the content of ideological systems. Finally, because of the failure to separate structure and content, constraint can not be used to determine the extent to which the public's beliefs have become more or less structured, but must be limited to determining the extent to which the public's beliefs have become more or less ideological. If this terminological and theoretical distinction is adopted, intra- and cross-disciplinary communication will be greatly facilitated. At least as important as better communication, the adoption of this distinction will make it glaringly apparent that while we know a great deal about the ideological character of mass beliefs, we know next to nothing about

their structure. A whole new field awaits exploration.

Just as no explorer would sally forth into the wilderness without adequate provisions to insure the success of the journey, social scientists cannot do without a theory to guide the examination of the structure of belief systems. Indeed, it is not because we have employed inappropriate methods that we do not possess a valid body of knowledge about the structure of beliefs. The failure must be laid on the doorstep of theory. The key to this failure is that we have relied on ad hoc, unidimensional conceptualizations of structure; which is to say, we have attempted to deal with the structure of political beliefs from a strictly common sensical, political point of view. Thus, we have fallen victim to the dangers Mannheim warned against half a century ago:

> "Empirical research which limits itself to a particular sphere--e.g., politics--is for a long time in the same position as common sense, i.e., the problematic nature of its theoretical basis remain concealed because the total situation never comes into view." (Mannheim, 1936, p. 102.)

To remedy the situation, and to allow the "total situation" to come into view, we must expand our perspective and develop a truly interdisciplinary approach. We can no longer confine the analysis of political beliefs to the political sphere alone, for politics only provide the content of beliefs. The structure of beliefs is provided by the cognitive system of mind. The next step in the exploration of the structure of political beliefs, then, is to provide the most powerful theoretical statement possible of the cognitive operations which result in the varying structures which house our political beliefs. There is no better place to find that theoretical statement than Jean Piaget's genetic epistemology.

GENETIC EPISTEMOLOGY: THE KEY TO THE STRUCTURE OF BELIEF SYSTEMS

Most people familiar with the name of Jean Piaget probably think of him as a child psychologist. Even people who might have read one or two books by Piaget, either in undergraduate psychology courses or in graduate education courses, would most likely agree with that categorization. It is by no means an illogical conclusion given the fact that Piaget authored no fewer than seventeen books in which the words "child", "children", or "childhood" appear in the title. To call Piaget a child psychologist, however, is to miss the major thrust of Piaget's monumental work. Although a biologist by training, the term Piaget no doubt would have preferred to describe the discipline he practiced would have been "genetic epistemology". Indeed, all of the studies of childhood cognitive development were conducted in order to provide the underpinnings of this new discipline which he founded. The first step in understanding Piaget, then, is to place his work in the context of genetic epistemology.

Piaget opens GENETIC EPISTEMOLOGY (1970) with the following sentence:

> "Genetic epistemology attempts to explain knowledge, and in particular scientific knowledge, on the basis of its history, its sociogenesis, and especially the psychological origins of the notions and operations upon which it is based." (p. 1.)

This statement should make it clear that the purpose of the cognitive studies was to uncover the psychological foundations of scientific knowledge. Piaget's focus was on the ways in which real human thought becomes capable of producing scientific knowledge and he expressed

the "fundamental hypothesis" of genetic epistemology as follows: "There is a parallelism between the progress made in the logical and rational organization of knowledge and the corresponding formative psychological processes." (ibid, p. 13) In short, Piaget deconstructed the mechanisms of human knowledge in order to answer the central question of epistemology: how does human thought produce scientific knowledge?

Before going any further, we might stop and ask what possible relevance all this has for political science. If the foregoing analysis of the concept of structure used in political science is even remotely on target, then it is clear that we are in need of an epistemologically grounded set of analytical categories if we are ever to be reasonably sure that our descriptions of belief systems are at all meaningful, let alone communicable across disciplines in the social sciences. As an example of the potential power of clarification genetic epistemology has for political science we might look at a field even more remote from cognitive development than political beliefs: physics. Piaget first studied the development of the child's conception of time and speed on the suggestion of Einstein. Piaget was particularly fond of recounting the role of these studies in clarifying problems faced by two physicists in their attempts to provide an axiomatization of Einstein's theory of relativity. Their problem was avoiding the vicious circle in the relationship between speed and time. Some years after Piaget's initial studies the two physicists chanced upon his work and as a result they were able to introduce into their system independent notions of time and speed based on the ordinal notion

of speed Piaget had discovered in his studies of children. Similarly, political science can benefit by adapting Piaget's analysis of the transformations of thought in general to the transformations of political beliefs in particular. For example, if we can document the ontogenic sequences through which political concepts develop, then we will have an empirical basis upon which to judge the degree to which mass beliefs are more or less structured.

The mechanisms by which thought is transformed are the basics of genetic epistemology. The purpose of the transformation is to provide more adequate knowledge, and genetic epistemology studies how the transformations move an individual from less to more adequate systems of knowledge:

> "Genetic epistemology deals with both the formation and the meaning of knowledge. We can formulate our problem in the following terms: by what means does the human mind go from a state of less sufficient knowledge to a state of higher knowledge?" (Ibid, p. 12.)

The answer Piaget gave is that "human knowledge is essentially active. To know is to assimilate reality into systems of transformations...Knowledge, then, is a system of transformations that become progressively adequate." (Ibid, p. 15.)

Piaget delineated four major periods of intellectural development, each progressively more adequate than its predecessor. In essence, each period represents a transformational system which processes perceptual information. It should be emphasized that each period represents a different organization of intelligence. Indeed it could be said that the field upon which Piaget focused in order to develop genetic epistemology is the field of intelligence, but it is his

peculiar definition of intelligence which accounts for the basic strength of his system. For Piaget intelligence can only be understood as a biological function: "Intellectual functioning is only a special case, a special extension of biological functioning." (Flavell, 1963, p. 43.) As such, intelligence must conform to the basic principles which underlie biological functioning in general: "In Piaget's view, cognitive development must have its roots firmly planted in biological growth, and basic principles valid for the former are to be found only among those which are true of the latter." (Flavell, 1963, p. 36.) The two universal principles of biological functioning are organization and adaptation, the latter composed of assimilation and accommodation. The whole of Piaget's theory of intelligence, or specifically of cognitive development, can be reduced to these "functional invariants". These functions are invariant in that they are present wherever life is present, from the simplest to the most complex organisms, in every aspect of the organism's functioning. Intelligence, then, is defined in terms of organization and adaptation, and the indissociable processes of assimilation and accomodation. Piaget's life work was to trace out the structural vicissitudes to which the functional invariants are subject in the course of intellectual development. It is this work which constitutes the discipline of genetic epistemology.

Since all biological organisms must interact with their environment in order to maintain themselves, Piaget's theory of intelligence is interactionist. The environment interacts with the organism, and the organism interacts with the environment. The two forms of

adaptation, assimilation and accommodation, reflect this dynamic interaction:

> "Adaptation must be described as an equilibrium between the action of the organism on the environment and vice versa. Taking the term in its broadest sense, 'assimilation' may be used to describe the action of the organism on surrounding objects...Conversely, the environment acts on the organism and following the practice of biologists, we can describe this converse action by the term 'accomodation'." (Piaget, 1960, pp. 7-8.)

Any form of adaptation presumes an assimilation to, and accomodation of, something.[14] That "something" is organization. In biological functioning the organization is the organism itself; in intellectual functioning organization is represnted by intellectual structures: "Intellectual development is an organizational process, and what are organized are active intellectual operations." (Flavell, 1963, p. 168.) The various stages in the organization of mental operations represent the structural elements of thought and the character of these organizational structures depends on the equilibrium between assimilation and accommodation. The summary term in Piaget's system which describes the state of equilibrium, the egocentric-sociocentric continuum, is the key term in developing a structural analysis of political beliefs. Before elaborating upon egocentrism, however, a few more expository points must be made.

The functional invariants are active throughout every stage and period of life, indeed in every action of life. Their function remains the same regardless of the level of development. What changes throughout this process of development are the ways the functional invariants are structured. For the question of cognitive development,

what characterizes the cognitive structures is the equilibrium between organization and adaptation at the broadest level, and at the level just below this, the equilibrium between accommodation and assimilation. Egocentrism, as we shall see in a moment, is defined in terms of this equilibrium between accommodation and assimilation. The point to note here is that since egocentrism is defined in terms of the functional invariants, and since the functional invariants persist through each stage of development, egocentrism itself is subject to the developmental process and manifests itself in different ways in each stage.

As mentioned, Piaget marked off four major periods describing the equilibrated states, or more appropriately, systems.[15] Each period circumscribes a series of qualitatively different and successively invariant stages. These four periods are as follows: The sensori-motor period from birth to about age two[16], when language and the capacity for representational thought develop; the second period is pre-operational thought in which representational thought is consolidated from age two to seven; pre-operatory thought is followed by the period of concrete operations in which the first evidence of complex, tightly integrated systems of actions appear and true operations (characterized by their reversability) develop between the ages of seven to eleven; and finally the period of formal operations in which the capacity for abstract, hypothetico-deductive reasoning is established between the ages of eleven and fifteen. Each of these four periods can be thought of as different organizations of intelligence,

yet each period is built upon and incorporates the achievements of the preceeding period(s). The process of development within each period is characterized by a number of important shared characteristics, and as we move on to a delineation of these characteristics we are knocking on the door of egocentrism. First, however, we must brush off some of the dust kicked up from this whirlwind romp through fifteen years of development.

If, as mentioned above, intellectual development is a process of organizing active intellectual operations, what are operations? The building blocks of operations are actions, which form schemas, which in turn are reciprocally coordinated to form operations. Fully developed operations are not achieved until the third period of development, so we must first focus our attention on the building blocks: action-schemas. Sensori-motor intelligence is practical intelligence. It is "aimed at getting results rather than stating truths." (Inhelder and Piaget, 1969, p. 4.) This form of intelligence (know-how) obtains results "by constructing a complex system of action-schemes." (Ibid, p. 4.) The basis of these action-schemes are our basic actions themselves. The developmental sequence of schemas are as follows: built upon instincts, or genetically determined behavior sequences (e.g., sucking), we quickly move beyond the specific instinctual messages through repetition, to generalization, and differentiation-recognition. An example should help clarify the sequence. The first attempts by the infant to find the nipple and suck are only randomly successful, but quickly, through repetition, the action becomes solidified into

a schema (that is, a plan organizing action), and then generalized, as for instance when the infant sucks objects other than the nipple. Gradually the expanded (generalized) range of application becomes differentiated as the environment demands new forms of accommodation for the assimilatory schema:

> "Repetition consolidates and stabilizes (the single schema) as well as providing the necessary condition for change. Generalization enlarges it by extending its domain of application. And differentiation has the consequence of dividing the originally global schema into new schemas, each with a sharper more discriminating focus on reality." (Flavell, 1963, p. 57.)

Each action-schema proceeds through the same series of repetition-generalization-differentiation, and as development proceeds, single schemas become reciprocally assimilated (coordinated) to form new and expanded action sequences in ever more complex patterns. It should be underlined, for it is fundamental to Piaget's entire conception of intelligence, and it is the factor which sets him apart from other theorists that intelligence is an <u>active</u> process of <u>construction</u>. While the environment provides certain restraints upon that activity, it is the organism's activity, generated from within by the organism's needs, which results in intellectual structures (through progressive accommodation).

In the first period these schemas "are made with the sole support of perception and movements and thus by means of a sensori-motor coordination of actions without the intervention of representation or thought." (Inhelder and Piaget, 1969, p. 4.) At the end of the period the child has achieved physical mastery of the environment and the entire cycle of development must be repeated on the symbolic

level, or the level of representational thought. Indeed, in each succeeding period the child must learn again all the basic relationships mastered in the preceeding period, but from a different perspective on reality. For example, after the sensori-motor period "there has to be a long and tortuous redevelopment, as it were, of space, of causality, of time and all the rest on this new symbolic plane." (Flavell, 1963, p. 149.) Development, then, is an expanding spiral. At each succeeding turn in the spiral development follows the same trajectory but upon a higher, expanding, organizational plane.[17] It must also be stated that the rate of development is not uniform, but varies with each basic schema. For example, the principle of conservation of mass preceeds the principle of the conservation of weight by about two years, yet both operations develop in the same period and employ essentially the same cognitive skills. Each operation has its own ontogenic history, albeit an ontogenic history which is generally isomorphic with the history of other operations.

How, then, can we characterize this ontogenic history of operations? To do so the reader must have a general handle on the four distinct periods in the development of intellectual structures. The four different intellectual orientations to reality can be characterized briefly as follows: 1) In the sensori-motor period reality is primarily a perceptual affair based on the action schemas developed through the child's interaction with the environment and vice versa. Intelligence is "know-how". 2) In the pre-operational period, action-schemas become internalized and capable of being internally represented in thought, but it is entirely a staccotic intelligence. That is, reality is a before-the-eye, moment-

to-moment reality, a present reality with no history or future. Reasoning is "transductive". There is a minimum of coordination between schemas and a complete lack of reversability; e.g., the ability to move from effect to cause, or from cause to effect, and back again. Reality appears as single-frame rather than continuous-frame:

> "It is a useful and only slightly misleading generalization about the preoperational child that he has no stable, enduring and internally consistent cognitive organization, no system-in-equilibrium, with which to order, relate, and make coherent, the world around him. His cognitive life, like his affective life, tends to be an unstable, discontinuous, moment-to-moment one." (Flavell, 1963, p. 158.)

3) In the concrete operational period the child moves away from "before-the-eye" reality and begins to move from the actual to the potential, but this is only relative to pre-operational thought. Concrete operations remain rooted in the actual and each area of thought is essentially an islet of organization that is unconnected to other islets. To use Flavell's analogy:

> "The structures of concrete operations are...rather like parking lots whose individual parking spaces are not occupied, now empty; the spaces themselves endure, however (as they would not for the pre-operational child) and lead their owner to look beyond the cars actually present towards potential, future occupants of the vacant and vacant-to-be spaces." (Flavell, 1963, p. 203.)

In short, operations are reversible, cars go in and come out of their spaces. The child will extrapolate from the the existing to the potential, but it is a special-case activity. 4) In the period of formal operations, reality appears as just one example of all possible realities. The child reverses the concrete orientation from actual to potential and reasons instead from potential to actual,

conceiving reality as just a special case of the possible. The adolescent at the level of formal operations possesses a highly integrated, interlocking system, a system by which the child easily moves from one subsystem to another in the course of solving a problem. The essential distinguishing characteristics are, first, that the adolescent begins from the extrapolation of the potential routinely, and, second, that formal operational thought is characterized by operations on operations (which in Piaget's terms are "second-degree operations", scientific operations proper).

We are now in a position to summarize the development of operations. Simple actions become action-schemas which follow the developmental sequence of repetition, generalization, and differentiation. Schemas then become reciprocally assimilated, and when these schemas begin to show the property of reversibility we can begin to speak of operations. Operations exhibit the following four characteristics:

> "First of all, an operation is an action that can be internalized; that is, it can be carried out in thought as well as executed materially. Second, it is a reversible action; that is, it can take place in one direction or in the opposite direction...The third characteristic of an operation is that it always supposes some conservation, some invariant...The fourth characteristic is that no operation exists alone. Every operation is related to a system of operations, or to a total structure as we call it." (Piaget, 1970, pp. 21-22.)

Piaget devotes a tremendous amount of effort to tracing these basic operations and to go into detail would take us far beyond what is necessary for our present purposes. The point to be made is that developed political beliefs are operations, or in their more primitive form, simply intuitions which exhibit the qualities of pre-operatory

thought. A belief system is composed of countless numbers of these operations joined together in particular, recognizable patterns. The character of these patterns is best described in terms of the degree of egocentrism, the subject to which we now turn.

EGOCENTRISM: THE MAINSPRING OF GENETIC EPISTEMOLOGY

The most important concept Piaget has to offer political science in assisting our attempts to develop a structural analysis of belief systems is the concept of egocentrism. Egocentrism was the unifying concept of all the early seminal studies of reasoning, moral judgment, language, logic, and the concepts of space, movement, causality and number. Egocentrism plays a role in Piaget's thought similar to the role libido played for Freud, or the labor theory of value played for Marx. The analogy can be extended even further: just as Freud's "Project" and Marx's 1844 manuscripts[18] provide basic insights and entry to their later works, the idea of egocentrism provides the groundwork for entry to all of Piaget's later writings on cognitive development, even his more developed formulations in which egocentrism, per se, ceases to be spoken of with any frequency. Even though Piaget gradually moved away from talking in terms of egocentrism in favor of the more precise language of logical algebra and equilibrium theory, egocentrism remains the central core of the foundation of Piaget's unparalleled work:

> "This tendency to substitute mathematical for verbal terminology is not to be taken as a rejection of earlier interpretations in favor of new and different ones. Rather, it is an attempt to discover (or even invent, whenever necessary) mathematical structures which express the essence of these verbally given organizational properties." (Flavell, 1963, p. 181.)

In Piaget's recent publications (1976, 1978) he returned to verbal, as opposed to mathematical explications, and although he spoke of egocentrism only once (1978, p. 59) in these studies, it is clear that egocentrism remained the central organizing concept in his vision of how the mind develops. If now the emphasis is upon progress "from the periphery to the center" in the development of conscious conceptualization, it is an emphasis completely consonant with, indeed the very essence of, egocentrism.

It is difficult in a short space to fully delineate the concepts essential to an understanding of Piaget's theory of cognitive development. He used so many different concepts to look at intellectual development that as Flavell commented, the choice of any one unifier is almost "arbitrary". It is arbitrary because first of all the model is holistic, each part inter-related, but also because many of the concepts (e.g., egocentrism, equilibrium, structure, centering, de-centering, states and transformations, transduction, etc.) attack the same problem from a different point of view. Piaget considered the various concepts, in Flavell's words, "as multiple expressions of a single cognitive orientation rather than as a string of unconnected attributes." (Flavell, 1963, p. 161.) Piaget himself preferred the concept of egocentrism as a unifier (1954b, p. 50.) and for my own understanding

of Piaget's ideas egocentrism has acted as the pivot providing access to the rest of his system. Consequently, egocentrism will continue to represent that "single cognitive orientation" which Piaget described in so many different ways.

"The concept of intellectual development as a movement from structured disequilibrium to structural equilibrium, repeating itself at ever higher levels of functioning, is a central concept for Piaget." (Flavel, 1963, p. 21.) Each stage and each period represents a dynamic equilibrium in "a grand equilibration process." But what is equilibrated? Simply stated, the equilibration is between the organism and the environment on the biological level, between self and other, subject and object, at the psychological, intellectual level. More complexly, the equilibration is between organization and adaptation which in turn requires an increasingly more adequate equilibrium between assimilation and accommodation.

It is the relationship between assimilation and accommodation that is central to the definition of egocentrism. In technical terms, egocentrism can be defined as a state of mind in which assimilation and accommodation are undifferentiated, yet mutually antagonistic in their functioning. The most extreme form of egocentrism is total assimilation to self, with minimal accommodation. In less technical terms, egocentrism is the lack of differentiation between self and other:

> "The initial state of undifferentiation and antagonism between the functional invariants essentially defines...egocentrism. The concept of egocentrism is a most important one in Piaget's thinking and has been from the very earliest writings (e.g., 1926). It denotes a cognitive state in which the cognizer sees the world from a single point of view only--his own--but without knowledge of the existence of (other) viewpoints or perspectives and, a fortiori, without awareness that he is the prisoner of his own." (Flavell, 1963, p. 60.)

Piaget described the term in a number of different ways, but perhaps the most succinct definition was as follows: "Egocentrism signifies the absence of both self-perception and objectivity." (1954a, p. xiii.)[19]

The second fundamental way to define egocentrism is as follows: Egocentrism can be conceived of as the preponderance of perception over conceptualization; or in more precise Piagetian terms, it is the disequilibrium between perception (an assimilatory activity) and conceptualization (an accommodatory activity). In infantile egocentrism the primacy (or profound disequilibrium) is absolute. In later stages and periods this primacy of perception over conceptualization is relative. Infantile egocentrism is absolute insofar as the objective world must be in direct contact with perceptual activity for the objective world to exist for the infant.

As reality solidifies into predictable relationships the child becomes aware of himself as an object in a world of objects and infantile egocentrism passes into personal history. The child's perspective on the physical plane has thus become sociocentric; that is, there

is coordination and articulation between self and other, and thus assimilation and accommodation are differentiated and articulated:

> "Knowledge of self and knowledge of objects are thus the dual resultants of the successive differentiation and equilibration of the invariant functions which characterize sensory-motor development." (Flavell, 1963, p. 62.)

Thus, with each advance in terms of the articulation and differentiation of accommodation and assimilation, egocentrism is diminished.

Although a simplification, it could be said that egocentrism passes through the same general course of development in each developmental period, but in an attenuated form. Stated differently, each succeeding developmental stage is characterized by a lesser degree of egocentricity relative to the preceding stage or by a greater degree of egocentrism relative to the stage that follows.[20] What is definitive of egocentrism, then, not only in the sensorimotor period, but in all its later manifestations, is the degree of undifferentiation between subject and object, or the preponderance of perception over conceptualization "relative to a differentiation and equilibrium yet to be achieved." (Flavell, 196 , p. 64.)

This leads to what, in terms of the application of egocentrism to the analysis of political beliefs, is the most important point to be made in this exposition. Egocentrism appears in successively attenuated form in the beginning of every stage and period of intellectual development. As Flavell pointed out,

> "Since it is always a subject-object undifferentiation relative to a differentiation and equilibrium yet to be achieved, egocentrism of course reappears in attenuated form at genetic levels beyond those of neonate and preschooler." (Flavell, 1963, p. 65.)

From stage to stage, period to period, indeed content domain to content domain, development is marked by the gradual attenuation of egocentrism, and this fact will have the greatest bearing on the subsequent discussion of egocentrism as it applies to the analysis of the structure of belief systems. The importance of egocentrism is that it is a form of thought which is not limited to childhood or adolescence, but is found in adult thought as well:

> "In our opinion these beliefs have their interest because the same phenomena reappear in adult mental life and because the psychological facts lead by a series of intermediate steps to metaphysical systems themselves." (Piaget, 1932/65, p. 75.)

Before moving on to the conditions which foster or inhibit egocentrism, there is another way of defining egocentrism which must be explicated. Directly related to the disequilibrium between assimilation and accommodation, and the primacy of perception over conceptualization, a third way of formulating the concept of egocentrism is as follows: Egocentrism begins by focusing on the periphery and only gradually moves to the center. In the egocentric perspective attention is focused upon the immediately perceptible, observable factors to the neglect of the internal regulations which produce what is immediately observable. In short, there is attention to effect, without concern for cause.

To recapitulate, there are three main ways to define egocentrism (supplemented by the statements in Appendix A): 1) Egocentrism consists of the disequilibrium between assimilation and accommodation; 2) Egocentrism is the preponderance of perception over conceptualization; 3) Egocentrism describes the state of cognizance which focuses on

the periphery and gradually moves in the direction of the center regions of actions and regulations. In each developmental manifestation of egocentrism, the goal[21] of development is a more adequate grasp of reality until the sociocentric perspective in which there is articulation and coordination between the functional invariants and between self and the environment is achieved:

> "We have seen how these successive constructions always involve a decentering of the initial egocentric point of view in order to place it in an ever-broader coordination of relations and concepts, so that each new terminal grouping further integrates the subject's activity by adapting it to an ever widening reality." (Piaget, 1967, p. 69.)

One consequence of the "ever-broader coordination of relations and concepts" is an expanded capacity for role-taking activity;[22] a consequence which bears directly upon the question of ideology. As multiple relations come into view more adequate models of social causality can be constructed through the ability to place oneself in the position of another in order to see the world from alternative points of view. The egocentric thinker sees only one point of view--his own--while the sociocentric thinker is able to entertain various possible perspectives and to judge how specific actions will impact upon different perspectives. In short, the egocentric perspective is unidimensional, while the sociocentric perspective is multidimensional. This permits more flexible responses to political problems, as well as an expanded capacity to direct political action effectively. Corresponding to this greater flexibility is the decline of dogmatism as one moves closer to the sociocentric point of view. Empirically,

it should be the case that egocentrism and dogmatism are close associates, affiliated by their common unidimensional perspective.[23]

Egocentrism's relationship to the functional invariants has been explicated and its place in the development of intellectual structures located, but I have said little of the basic qualities of egocentric thought by which it can be identified and understood. In order to apply egocentrism to the analysis of belief systems, I shall briefly characterize egocentrism as it is found in each of the four major periods of cognitive development.

INFANTILE EGOCENTRISM is characterized primarily by the lack of object permanence. The lack of object permanence is the result of reality being assimilated to the self solely on the basis of the infant's own immediate sensori-motor activity. Assimilation is of utmost preponderance with accommodation at its least progressed state. Reality is discontinuous and dependent upon immediate perception:

> "In effect, for the newborn child there is no space that contains objects, since there are no objects (including the body proper which naturally is not conveived of as an object). There is a series of spaces differing one from another and all centered on the body proper...but they lack coordination with each other. Thus there are egocentric spaces, we might say, not coordinated and not including the body itself as an element in a container." (Piaget, 1973, p. 15.)

It is the construction of a concept of the permanent object which leads to the coordination of the various discontinuous sensual spaces into universal space containing both self and other/object:

> "The initial absence of substantive objects, followed by the construction of solid and permanent objects, is the first example of the transition

> from primitive, total egocentricity to the final elaboration of an external universe." (Piaget, 1967 reprint of the 1940 article, p. 14.)

As the world becomes substantiated there is a parallel development on the physical plane of the child's sense of causality, which is based on the child's own motor activity, along with a sense of time which is based on a sense of speed (which, it turns out, is a primitive intuition while time is an intellectual construction). The goal of development in this sensori-motor period, then, is an awareness of an objective self and an objective environment.[24]

PRE-OPERATORY, OR INTUITIVE, EGOCENTRISM is best understood as a recapitulation of infantile egocentrism on the level of symbolic, or, better, representational thought. That is, there is the same lack of differentiation between self and other. This lack of differentiation is best understood in terms of the inability to place the self in the position of another, simply because the other's point of view is only understood (assimilated) from the child's own perspective:

> "Piaget uses (egocentrism) to mean the child's inability to take another's point of view. It is not a pejorative term with respect to the child since the child does not take another's point of view because he cannot as opposed to the egocentric adult who can take another's point of view but will not." (Elkind, in the introduction to Piaget, 1967.)

The experimental evidence of this inability is quite extensive.[25] A concrete example is the young child's inability to distinguish right from left from another's point of view. For example, at the age of two and a half my son was easily able to distinguish the right and left parts of his body, and if I sat next to him he could also distinguish the right and left parts of my body. But, if I faced

him, he simply "mirrored" his body onto mine such that my right arm is designated as (his) left arm. Piaget has many documented examples of this kind of failure to transpose spatial relations (see, in particular, Piaget and Inhelder, 1956). A typical experiment conducted to test the child's ability to place himself in the position of another was as follows. When a doll is moved around a pasteboard model of three differently colored mountains, the pre-operative child cannot correctly select (from snapshots of ten different perspectives on the model) which perspective is that of the doll. In fact, each change in perspective remains undifferentiated: the child continues to pick his own perspective as that of the doll's or a random perspective, "indicating that, so far as the child is concerned, all the pictures are equally suitable for all points of view." (Piaget and Inhelder, 1956, p. 213.) In short, all points of view are assimilated to the child's own individual point of view:

> "However dependent he may be on surrounding intellectual influences, the young child assimilates them in his own way. He reduces them to his point of view and therefore distorts them without realizing it, simply because he can not yet distinguish his point of view from that of others through failure to co-ordinate or 'group' the points of view. Thus, both on the social and on the physical plane, he is egocentric through ignorance of his own subjectivity...Intellectual egocentricity is...nothing more than a lack of coordination, a failure to 'group' relations with other individuals as well as with other objects." (Piaget, 1960, pp. 160-161.)

The consequences of this inability to take the point of view of another is of fundamental importance in defining the over-all quality of pre-operatory, or, intuitive, thought. Further, the conse-

quences of this inability can be seen to operate in the political beliefs of adults whose beliefs are structured on an order comparable to the intuitive thought of the child:

> "One quality stands out in the thinking of the young child: he constantly makes assertions without trying to support them with facts. This lack of attempts at proof stems from the character of the child's social behavior...from his egocentricity conceived as a lack of differentiation between his own point of view and that of others. It is only vis-a-vis others that we are led to seek evidence for our statements." (Piaget, 1967, p. 29.)

and,

> "Far from helping the subject distinguish between his own and other viewpoints, the egocentric attitude tends to encourage him to accept it without question as the only one possible." (Piaget and Inhelder, 1956, p. 194.)

Both of the above quotations point to ways in which egocentrism can be operationalized to measure the structure of beliefs, as well as pointing to important areas that would need to be included in studying the correlates of adult egocentrism. For example, social isolation ought to correlate with egocentrism if it is indeed the case that evidence is sought only vis-a-vis others. In addition, the failure to entertain alternative viewpoints or to assert, rather than argue with evidence, ought to prove crucial categories of analysis.

THE EGOCENTRISM OF CONCRETE OPERATIONAL THOUGHT is best conceived of as the taking of existing reality as the only possible reality. The distinctions here become more difficult and more technical, particularly as the child enters the later stages of concrete operations in which a fairly adequate logic is operative. Concrete thought

in its final stages is logical and capable of reversibility, but it is tied directly to concrete existing reality and the reality remains fairly compartmentalized; that is, reality is a set of subsystems which have not been reciprocally assimilated into a single over-all integrated system of possible realities. The child is capable of forming groupings and groups, but the use of lattice structures remains relatively undeveloped insofar as lattice structures entail all possible relations among a set of elements rather than simply the existing relations.

The essential differences between concrete and formal operations are two: formal operations are operations on operations (second order operations) and are characterized by being a combinatorial system (see Piaget and Inhelder, 1969, p. 113.) It is important to note that the logical operations in the early stages of the concrete period are still tied to the subject's own actions. Later when concrete logic is completed and formal operations begin, the adolescent will be able to perform the same operations from a hypothetical position without the aid of a concrete "experiment". The adolescent will understand the underlying principles rather than simply the overt relationships. The course of development in the concrete period is to banish egocentric perception in favor of concrete operations:

> "It is operations that result in a correction of perceptual intuition-which is always a victim of illusions of the moment--and which 'decenter' egocentricity so as to transform transitory relationships into a coherent system of objective, permanent relations." (Piaget, 1967, p. 46.)

An example of the egocentrism of the concrete period can be found in the realm of moral reasoning, a field which already has been shown to be of particular political relevance.[26] Piaget identified three basic stages in the consciousness of rules. The first is the "egocentric" stage (roughly, although not completely, isometric with the preoperatory period) when rules are not coercive. Adherence to rules is a matter of little consequence; each child either has a special set of rules of his own, or received rules are seen simply as interesting examples rather than obligatory realities. During the second stage (which is roughly equivalent to the period of concrete operations), "rules are regarded as sacred and untouchable, emanating from adults and lasting forever. Every suggested alteration strikes the child as a transgression." (Piaget, 1932, p. 28.) (This stage corresponds to Kohlberg's stages three and four, the "Good Boy" and "Law and Order" orientations.) During the third stage (roughly corresponding to the onset of formal operations), "a rule is looked upon as a law due to mutual consent, which you must respect if you want to be logical but which is permissible to alter on the condition of enlisting general opinion on your side." (Ibid, p. 28.) Concrete egocentrism, then, is the perception of existing reality as the only possible reality. Rules are literally as inflexible as concrete. In this case there is the same disequilibrium between assimilation and accommodation, and between perception and conceptualization; i.e., perceived rules are the only possible rules conceivable. There is also a lack of reversibility in the sense that rules cannot be changed. A transitory position between concrete rules and rules

based on mutual consent is the position that a rule can change but it is not a "true" rule even if everyone agrees to it.

The major difference between concrete and formal orientations toward rules is that in the former only the surface compliance is centered upon, not the underlying principle of the rule or the intent of the rule violater (e.g., in primitive law there is often no accommodation for accidental homocide--homocide is homocide), whereas in the latter attention is focused on the rule's purpose (the principles or propositions), as well as the individual's intent. In short, there is a concept of justice which recognizes the spirit and not simply the letter of the law; there is a sense of justice which recognizes the possibility of conflicting laws, pressures, and special circumstances; there is a sense of justice which does not center on the rule itself but decenters its perspective to include the context in which the rule comes into play.

THE ADOLESCENT EGOCENTRISM OF FORMAL OPERATIONAL THOUGHT, as treated by Piaget, is not, from my point of view, entirely satisfactory. My basic intuition is that Piaget's treatment of adolescent egocentrism is too content oriented and that it will require extensive reformulation as more research is conducted. With that caution in mind, let us look briefly at adolescent egocentrism.

Adolescent egocentrism is the result of the burgeoning capacity of formal thought to encompass all of reality. It is, in effect, a second "Copernican Revolution" (the first in the sensori-motor period) in which reality becomes simply one rather mundane and imperfect example of all possible realities. Adolescent egocentrism is the

distortion of thought assimilated to itself without adequate accommodation of reality:

> "In accordance with a law we have already seen manifested in the infant and the young child, each new mental ability starts off by incorporating the world in a process of egocentric assimilation. Only later does it attain equilibrium through a compensating accommodation to reality. The intellectual egocentricity of adolescence is comparable to the egocentricity of the infant who assimilates the universe into his own corporal activity and that of the young child who assimilates things into his own nascent thought (symbolic play, etc.). Adolescent egocentricity is manifested by belief in the omnipotence of reflection, as though the world should submit itself to idealistic schemes rather than to systems of reality. It is the metaphysical age par excellence: the self is strong enough to reconstruct the universe and big enough to incorporate it...The metaphysical egocentricity of the adolescent is gradually lessened as a reconciliation between formal thought and reality is effected. Equilibrium is attained when the adolescent understands that the proper function of reflection is not to contradict but to predict and interpret experience." (Piaget, 1967, p. 64.)

The adolescent, then, operates with a certain dogmatism and an incessant jamming of reality into his own formal categories and relations. There is a certain closed mindedness and failure to accommodate thought to reality. But once thought accommodates reality, the individual, is capable of truly transforming reality (at least on the plane of social relations) through the ability to interpret and predict experience. The manner in which the individual arrives at this position is the subject of the next section.

COOPERATION: THE SCOURGE OF EGOCENTRISM

COOPERATION: THE SCOURGE OF EGOCENTRISM

There is a direct and fundamental relationship between egocentrism and cooperation which goes to the core of social life and has the most far-reaching implications for the organization of society and the development of individual ideas. If to begin with we dissect the word into "co" and "operation", there is an initial insight into the special importance of cooperation for Piaget. Cooperation is a joint operation. There is implied in any form of cooperation a coordination of viewpoints, of ends and means, and requires, therefore, a sociocentric, as opposed to an egocentric perspective. The question for this section is what role cooperation plays in the transition from egocentric to sociocentric thinking.

Piaget's most extensive formulation of the role of cooperation in the development of mental structures is in The Moral Judgment of the Child (1932/65), although the issue is returned to in a number of other studies (e.g., chapter 6 of The Psychology of Intelligence and the first essay of Six Psychological Studies). The treatment of cooperation in the moral judgment book is directly related to the findings of four other studies which, along with the book on moral judgment, form the five early classics of Piaget's career. The Moral Judgment of the Child is a sort of capstone to the work on language (1926), reasoning (1928), reality (1929), and causality (1930), and like all capstones it must bear a direct relation to the elements to which it is joined while still playing a slightly

different functional role.

In this case, the direct relation with the previous studies was the identification of moral realism which parallels the intellectual realism of the young child, as well as the further development of the idea of egocentrism. The slightly different function was to turn the focus of attention from the strictly psychological mechanisms to the related mechanisms of socialization. In this work, more so than in the others, Piaget is particularly concerned with pedagogical and sociological questions bearing upon the manner in which the child is socialized. Hence, The Moral Judgment of the Child is probably the most directly relevant of Piaget's books for political scientists (as well as being my personal favorite among Piaget's writings). Its relevance to politics lies in the fact that the central focus is upon the relationship between authority and cooperation which, of course, is of profound importance in the political world. In addition, much of political philosophy is concerned with judgments of "the Good" (not to mention the central role of moral reasoning for individual political judgments) and therefore paying attention to the manner in which our tools of judgment are shaped can only aid us in their employment:

> "In a sense, child morality throws light on adult morality. If we want to form men and women, nothing will fit us so well for the task as to study the laws that govern their formation." (Piaget, 1932-65, p. 9.)

So what are those "laws of formation"?

The core issue explored in The Moral Judgment of the Child is the collaboration of authority (constraint), egocentrism, and moral

realism on the one hand, and the collaboration of cooperation, operatory thought, and moral autonomy on the other. Throughout Piaget's exposition, authority is opposed to cooperation, or more precisely, cooperation is conceived of as the "ideal equilibrium toward which all relations of constraint end." (Piaget, Ibid, p. 90.) The basic theme (or law of formation) is that constraint reinforces the child's initial egocentric perspective and maintains moral realism, while cooperation weakens egocentrism and fosters moral autonomy. In short, there are two moralities, derived from two distinct forms of social relations: a morality of constraint or of heteronomy, and a morality of cooperation, or of autonomy. These two types of morality, deriving from two types of social relations are not limited to childhood socialization:

> "Social constraint--and by this we mean <u>any social relation into which there enters the element of authority</u> and which is not, like cooperation, the result of an interchange between equal individuals--has on the individual results that are analogous to those exercised by adult constraint on the mind of the child. <u>The two phenomena, moreover are really one and the same thing</u>, and the adult who is under the dominion of unilateral respect for the 'Elders' and for tradition is really behaving like a child." (Ibid, p. 340, e.a.)

The implications for social structure are obvious and overwhelming. Social infantalization produces a psychology of dependence in which unilateral respect for authority is among the most prominent characteristics.

As long as an element of authority exists in the interaction between individuals there is, by definition, an imbalance in their social relations. That is, the authority of one negates the authority of the other(s), and we cannot speak of "co", or mutual actions,

but of a unilateral determination of action. Naturally, "pure" cooperation and "pure" constraint are rare, if not impossible, in actual human relations, but they can be thought of as the limiting "ideals" between which all forms of human interaction fall. This becomes clearer if we think of cooperation in terms of reciprocity, and reciprocity as the social equivalent of logical reversibility (the essential requirement for operatory thought). Reciprocity is based on mutual as opposed to unilateral respect. The egocentric child cannot cooperate because of the lack of reciprocity represented by the failure to differentiate his own point of view from that of others:

> "So long as the child does not dissociate his ego from the suggestions coming from the social world, he cannot cooperate, for in order to cooperate, one must be conscious of one's ego and situate it in relation to thought in general. And in order to become conscious of one's ego it is necessary to liberate oneself from the thought and will of others. The coercion exercised by the adult or the older child is therefore inseparable from the unconscious egocentricity of the very young child." (Ibid, p. 93.)

With mutual respect, there is a complete reversibility between equals, and action is dependent upon mutual agreement rather than command; and this is the key to the special role cooperation plays in the development of moral autonomy and operatory thought. To reach agreement, that is, to coordinate viewpoints, requires an exchange of ideas, a differentiation of viewpoints and their integration. It means that individuals must have a shared system of meaning which requires a consistency of meaning and a certain "morality" in their thought--that is, logic ("Logic is the morality of thought, just as morality is the logic of action." Piaget, Ibid, p. 398.)--which

will enable them to cooperate:

> "The obligation not to contradict oneself is not simply a conditional necessity for anybody who accepts the exigencies of operational activity; it is also a moral 'categorical' imperative, inasmuch as it is indispensable for intellectual interaction and cooperation. And, indeed, the child first seeks to avoid contradicting himself when it is in the presence of others. In the same way, objectivity, the need for verification, the need for words and ideas to keep their meaning constant, etc., are as much social obligations as conditions of operational thought." (Piaget, 1950-60, p. 163.)

Cooperation, then, forces upon the child an awareness of the need to justify his own point of view, to substantiate his perspective so that the child simultaneously becomes aware of both his own point of view and that of the other(s). For this reason, the onset of true cooperation between children and the onset of operatory thought are contemporaneous developments:

> "The more intuitions articulate themselves and end by grouping themselves operationally, the more adept the child becomes at cooperation, a social relationship which is quite distinct from coercion in that it involves a reciprocity between individuals who know how to differentiate their viewpoints. As far as intelligence is concerned, cooperation is thus an objectively conducted discussion (out of which arise internalized discussion, i.e., deliberation or reflection), collaboration in work, exchange of ideas, mutual control (the origin of the need for verification and demonstration). etc. It is therefore clear that cooperation is the first of a series of forms of behavior which are important for the constitution and development of logic." (Ibid, p. 162.)

Thus,

> "At about the age of seven the child becomes capable of cooperation because he no longer confuses his own point of view with that of others. He is able to dissociate his point of view from that of others and to coordinate these different points of view." (Piaget, 1940/67, p. 39.)

Cooperation, then, counters intuitive thought; thought, that is, characterized by transduction, phenomenalism, animism, finalism, artificialism, or, in short, egocentricity, and brings the child onto the plane of objective relationships.

> "It is discussion and mutual criticism that urge us to analyze things; left to ourselves, we are quickly satisfied with a 'global', and consequently, a subjective explanation." (Piaget, 132/65, p. 194.)

A PRELIMINARY SUMMARY OF THE PIAGETIAN SYSTEM

Although it is a near impossible task, this paragraph, long though it may be, attempts to summarize Piaget's general perspective on cognitive structures: The life of the mind is one with the life of the organism. Organization and adaptation, with assimilation and accommodation composing the latter, are common to all forms of biological functioning, including psychological functioning. The functions are invariant while the structures through which the functional invariants operate are variable. The overall tendency of biological functioning, and hence, of psychological functioning, is toward equilibrium. The functional invariants operate according to the laws of equilibrium and transformation as do the structures created through biological functioning. Throughout, the organism and the environment stand in a reciprocal relationship, the one affecting the other. The organism's activity affects the organism's structure[27] just as

the structure of the organism affects the activity of the organism. Moving specifically to psychological functioning, all forms of behavior (which for Piaget refer to "all action directed by the organism toward the outside world in order to change conditions therein or to change their own situation in relation to these surroundings." (Piaget, 1976/78, p. ix.) entail two inseparable components and corresponding structures: the affective component which produces the motivating energy for all behavior and can be reduced, following Claparede, to need which is always an expression of disequilibrium (Piaget, 1940/67, p. 6.); and the cognitive component, that is, intelligence, which provides the structure of behavior designed to satisfy the need arising from the affective component. There is a constant parallel between affective and cognitive life, the structure of one affecting the structure of the other. All forms of intellectual activity are built upon the organism's activity in interaction with the environment. Intelligence is neither a reflection of the environment, nor a vital expression of the organism itself, but a product of the organism and the environment operating in conjunction. Intellectual structures are built up from instinctive, hereditary reflex actions, and on through the first motor habits, which become, in turn, schemas, operations, and operations on operations. These actions are organized into four successive, invariant, periods, each with a succession of different structures representing an ever more precise adaptational equilibrium with the environment. The four periods are designated in the following order: Sensori-motor, Pre-Operational, Concrete Operational, and Formal Operational Thought. Development within

each stage and period is rhythmic and cyclical, both on the plane of behavior and the plane of consciousness (which is ruled by the "law of conscious realization": consciousness lags behind activity). This development is marked by both horizontal and vertical decalage, meaning development repeats itself on each new plane of activity or consciousness (verticle decalage) and within each plane (horizontal decalage) development repeats itself in each new domain of activity (remembering that thought itself is activity, albeit internalized and abstract in its most developed stages). This rhythmic, cyclical development is characterized by movement from the egocentric perspective to a de-centered, sociocentric perspective; or alternatively, from the periphery (i.e., perceptual plane) to the center (i.e., the plane of internal regulations). Cooperation, the mutual regulation of operations, shakes the child out of the egocentric perspective and is the most effective means of socialization. Finally, the patterns of thought found in childhood recur in adult life. Intellectual development is not a once-and-for-all affair. In each new area we confront, the construction of our ideas begins by first assimilating what is offered by our fresh contact with the environment to our own egocentric perspective (egocentric in the sense that we have not yet accommodated the old to the new), and only later coming to a more equilibrated perspective on the new. While the process may be more accelerated in adult life than in childhood, the process continues to parallel the cycles of previous adaptation. Needless to say, development is uneven. Some areas are highly developed, particularly our competence in understanding physical reality, and

others are quite under-developed. There is perhaps no more representative area of this under-development than our knowledge of political reality, to which we now turn.

PIAGET AND POLITICS

Although it has been over fifteen years since Merelman (1966) suggested that Piaget's approach should be applied to the analysis of political beliefs, surprisingly few political scientists have acted on the suggestion.[28] There are no doubt many reasons for this lack of attention to Piaget's work; reasons which may well include the formidable terminology employed by Piaget, resistance to stage theories, resistance to cross disciplinary approaches, the voluminous writings which must be digested in order to appreciate the full scope of Piaget's approach, or simply the fact that Piaget wrote in French (although most of his work is available in translation). Whatever the reason or reasons, I believe that progress in the analysis of belief systems (as well as in the area of political socialization) depends upon political scientists becoming familiar with Piaget's work.[29] In the remainder of this essay I will outline two different paths which political scientists can follow in order to incorporate Piaget into the discipline. As these two paths are outlined it should become clear that the task is far too large for any single individual and will require the commitment of a number of years by many researchers before it could be said that we have tapped the tremendous potential of Piaget's approach to the cognitive dimension of mind.[30]

There are both long and short term tasks which must be undertaken in order to facilitate the routine use of Piagetian categories in political analyses. First, we shall look at the long term tasks. The primary objective here is to document the sequences through which various political concepts pass during the course of development. The purpose of these studies would be to provide a developmental base-line against which to measure the degree to which any particular belief system is more or less structured. Many of these studies will no doubt be similar to those conducted by Adelson and his associates, except that they will have to include a wider range of ages and a narrower focus on specific political ideas.[31] Indeed, the best procedure would probably be to adapt Adelson's island premise to a Kohlberg style dilemma which narrowed in on the reasoning behind particular political concepts. This would require developing a scaling technique similar to that used by Kohlberg. The following comments concern the main theoretical perspectives that must be incorporated into this proposed scaling instrument. Once the Kohlberg type scale is created and the developmental sequences determined we could then change to a format that could be used in more typical survey situations by correlating responses to specific questions with the various conceptual stages. The result would lead to a limited set of questions that could be inserted in mass surveys to measure the structure of political beliefs; and it would be a measure based on the actual developmental sequences to which belief systems are subject.

Since it is fairly clear that structure is domain specific,[32] broad scale studies of the structure of political beliefs will depend

upon numerous studies of particular concepts. For example, concepts of power, law, government, equality, freedom, democracy, communism, authority, community, and citizenship, to mention a few of the most notable, will each have to be studied separately, decomposed into their various schematic and operational groupings, and then measures will have to be developed that can discriminate the stages of development for each concept. Each of these separate measures might then be combined into a single scale tapping the overall structure of the belief system.

In the process of developing these separate scales a number of general characteristics of egocentrism will have to be relied upon if the scales are to be complimentary. The over-arching concern must be the extent to which perception dominates conceptualization. The main problem to be overcome in establishing this criterion is finding some way to avoid relying solely on the content of responses in order to determine the degree of conceptualization. This is desireable since the content of responses will surely vary from culture to culture, particularly among individuals with more egocentric perspectives. Those relying on perception to form their political ideas will simply recapitulate concrete examples of the idea in question as those examples are found in their particular polity. In short, they will simply describe the idea as it is manifest in their field of perception. In scaling responses, the problem will be transposing specific content into structural categories. While detailing the exact mechanics of devising a scale for coding responses would detain us too long here, it might be helpful to discuss a few of the categories that

might help discriminate concrete from abstract responses.

Perhaps the best indicator is whether or not alternative formulations of the concept in question are entertained by the subject. Concrete formulations of political concepts will be unidimensional. Respondents will proceed as if there is a "correct" answer, and only one correct answer, to a general question such as, "What is the meaning of democracy?", or "What is the basis of authority?".[33] As development proceeds, the subject will realize that there are many alternative formulations to any single idea, that there is the possibility of choosing from among these alternatives, and that one must present logical or evidential reasons for making a choice from among the alternatives. Thus, the presence or absence of alternative formulations will probably turn out to be the best single predictor of cognitive structures. It should be emphasized, however, that no single predictor is adequate since often the same structural components are arrayed in very different structural systems. It is the overall variations in the relationships among the various schemas, operations, and concepts that permit us to discriminate different structural groupings.

A related indicator of structure is the degree to which the concept in question is differentiated. This is different from the question of alternatives and separate categories should be used, but it should also be noted that one form of differentiation is in fact the conceptualization of alternatives. Even so, the reason we should use separate categories is that even a solitary alternative can vary between being undifferentiated and highly differentiated. An example might help to clarify why it is necessary to treat alternative

formulations and differentiation separately. It may well turn out that the idea of equality is based on measurable, or perceivable, differences in the early stages of development, while in later stages of development equality is based on derived notions of equality (see Lee, 1959, for this distinction). The question of alternative formulations concerns the extent to which the idea is derived from different underlying principles which produce different concepts of equality. The question of differentiation concerns the scope and complexity of any one of these alternatives. For example, principles of equality can be derived from 1) our shared capacity to reason (the Sophists), 2) our shared creation by God (various religious derivations), 3) our shared species being (Marx), and so forth. Awareness of alternatives, or at least the possibility of alternatives, is a question distinct from how complex each derivation might be. Regardless of the number of derivations conceived, any one could be related to political, social, and economic issues, and each of these areas could be further subdivided and attached to different idea complexes. A person subscribing to religious derivations of equality who sees no other alternative way of conceptualizing equality, might still have a highly differentiated idea of the ways in which shared creation produces equality and the consequences. Therefore, alternatives and differentiation must be treated separately and alternatives must be considered a more powerful discriminating factor in determining the degree of egocentrism. It will probably be useful to use awareness of alternative formulations to distinguish period differences, while differentiation can be used to discriminate stages of development within each period.

A third discriminating factor, and one related to the awareness of alternative formulations is the ability, or lack thereof, to place oneself in the position of another. Both direct and indirect approaches to this dimension will probably be necessary. Indirect measures might include the frequency with which individuals spontaneously place themselves in the position of another in trying to come to terms with basic political conflicts. Such spontaneous attempts, however, will probably not prove to be reliable indicators since people who <u>can</u> place themselves in the position of another do not necessarily do so; and those who do, do not necessarily change their perspective such that it is more closely aligned with the other's perspective, but simply see their own point of view while standing in the other's shoes. Therefore, direct measures will have to be developed in which the sociocentric subjects must change their perspective as a consequence of taking the other's point of view. Such role-taking tasks could be incorporated in the Kohlberg-style scaling instrument.

A fourth basic structural indicator is the question of causality. The egocentric thinker, as a function of the preponderance of perception over conceptualization, focuses on the effect to the neglect of the cause in forming judgments of political events and relationships. The most egocentric thinkers will exhibit a complete lack of causal statements.[34] As development proceeds there should be a steady increase in causal statements, causes should eventually become interrelated, and ultimately reversible. A number of questions could be used to explore this dimension in the context of Adelson's island premise;

e.g., the inhabitants which to eliminate war or poverty or any other political problem and the subject could be asked how the islanders should go about accomplishing their goal using probes designed to uncover causal relationships. Again, the goal is to document the developmental sequencs through which concepts of political causality develop from childhood, through adolescence, to adulthood. These sequences could then be used as a baseline to determine the ways in which individual structural differences in concepts of political causality influence political behavior and policy preferences.

A fifth general indicator of structure is the relationship between general principles and concrete manifestations, as well as the closely related issue of inductive and deductive reasoning. Here the developmental sequences should proceed from a complete lack of principled statements beyond simple classifications of good and bad, through a gradual and laborious inductive process dealing with concrete examples which may be built up into general principles in later stages, on to an over-emphasis on general principles and a lack of concern for discrepant examples, and finally to an equilibrated structure in which the individual reasons equally from general principle to specific examples and from specific example to general principles. In inductive and deductive terms, the first structures are largely perceptual, transductive, intuitive and associative; the second structures follow inductive logical principles exclusively and remain at the level of concrete examples; the third structural sequence involves strictly deductive principles and a tendency to remain largely at the abstract level; while the fourth structural sequence involves both inductive

and deductive reasoning, coordinated such that the individual has the ability to reason in both directions.

There are other structural indicators which will have to be developed and we will have to discover how progress in one content domain influences development in other content domains, as well as the ways in which domains are grouped. The examples given thus far, however, are probably the most important, and surely should indicate the tremendous amount of work that must be done in order to move beyond the task of developing a scaling instrument to its application in the analysis of specific political questions. With just these five structural indicators and the dozen or so content domains mentioned thus far, it will be several years before we have an epistemologically grounded scale for research on the structure of political beliefs. In the meantime, there is an alternative approach which is less adequate but clearly superior to the continued use of constraint as a measure of structure. Let us turn, finally, to this interim strategy.

The short term alternative to a direct political reasoning scale involves the use of existing scales that can be used in coordination as measures of cognitive structure. There are at least three scales of direct relevance to the question at hand, only one of which, however, is diachronic. These scales are Kohlberg's moral reasoning scale, Rokeach's Dogmatism scale (1960), and a Bieri style cognitive complexity scale (Bieri, et. al., 1966). All three scales are structural measures, but only Kohlberg's is developmental. Each scale has certain deficiences when used alone, but in conjunction, might be able to balance, at least partially, their individual faults. Even so, this short term

alternative must be recognized as only a partial, indirect substitute for an empirically and epistemologically grounded scale for political reasoning.

A Bieri style cognitive complexity scale could be employed to tap the complexity of particular political ideas, with each conceptual area measured separately. Since, as argued above (pp. 28-29), equal degrees of complexity can occur at different developmental levels, Kohlberg's scale could be used in conjunction to provide a "ball park" estimate of level of cognitive development (insofar as cognitive development precedes moral development). Rokeach's scale could be used in a similar, although not as precise a manner in that closed-mindedness is closely related to egocentrism. In effect, each scale can serve as a partial check on the others. Still, it is unlikely that such a procedure could be used in large scale survey formats, since a high degree of interpretive judgment must be employed in coordinating the scales. In smaller, experimental samples, however, the scales might be quite useful aids in the development first of a political reasoning scale along the lines of Kohlberg's moral reasoning scale, and later in the development of a survey format which correlated well with the reasoning scale and thus could replace constraint as the measure of structure.

CONCLUSION

The task which confronts us, then, is the deconstruction of political belief systems. We must uncover the ontogenic sequences through which political concepts develop, from schemas, to operations, on to operations on operations. Once this task is complete we will have a basis upon

which to judge whether or not sets of belief systems are more or less structured.

A major obstacle obstructing the completion of that task is the lack of a shared paradigmatic framework and language among political scientists and political psychologists. Until that language and paradigm are established it will be next to impossible to coordinate research across the increasing compartmentalization of research efforts within the discipline, let alone across disciplines. Piaget can provide a major part of the paradigm. If political scientists can learn to use the concept of egocentrism in a precise and shared manner in order to distinguish between the content and the structure of belief systems, then we will have made a major step forward as a discipline.

APPENDIX A

PIAGET"S USE OF EGOCENTRISM[1]

1. "Infantile egocentrism is thus in its essence an undifferentiation between self and social environment."

2. "Egocentrism is by definition the confusion between self and the other."

3. "It is somehow the totality of precritical and consequently pre-objective attitudes of knowledge."

4. Egocentrism consists only in taking as sole reality the one which appears to perception."

5. "It is the negation of the objective attitude, consequently of logical analysis. It leads on the contrary to subjective synthesis."

6. "Egocentrism ought not to be defined only by the primacy of assimilation over accommodation, but by its disequilibrium of the two processes, with primacy alternating between one and the other."

7. "The thought of the young child was egocentric, not in the sense of a hypertrophy of the self, but in the sense of centration on his own point of view.

8. "We call egocentrism the undifferentiation of one's own point of view and that of others."

9. "Childish egocentrism, far from being asocial, always goes hand in hand with adult constraint. It is presocial only in relation to cooperation."

10. "Egocentrism appears to us as an intermediate between socialized and purely individual behavior."

11. "(The child) plays in an individual manner with material that is social; such is egocentrism."

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[1]Most of these definitional statements are taken from Piaget: Dictionary of Terms, by Antonio M. Battro.

12. "Egocentrism is opposed to objectivity, as far as objectivity means relativity on the physical plane and reciprocity on the social plane."

13. "Egocentrism is an effect characterized by an undifferentiation between the subject and his exterior world, and not by the exact knowledge which the subject has of himself: instead of leading to an effort of introspection or reflection, upon the self, infantile egocentrism is on the contrary ignorance of the interior life and deformation of the self as well as ignorance of objective relations and deformations of things."

14. "Social egocentrism is an epistemic attitude as well as purely intellectual egocentrism; it is a way of understanding others, as egocentrism in general is an attitude toward objects."

15. "One quality stands out in the thinking of the young child: he constantly makes assertions without trying to support them with facts. This lack of attempts at proof stems from the character of the child's social behavior at this age, i.e., from his egocentricity conceived as a lack of differentiation between his own point of view and that of others. It is only vis-a-vis others that we are led to seek evidence for our statements."

16. "Certain features of child morality always appear to be closely connected with a situation that from the first predominates in childhood (egocentrism resulting from the inequality between child and adult surroundings which presses upon him) but which may recur in adult life, especially in the strictly conformist and gerontocratic societies designated as primitive."

17. "Egocentrism and imitation are one and the same."

18. "However dependent he may be on surrounding intellectual influences, the young child assimilates them in his own way. He reduces them to his point of view and therefore distorts them without realizing it, simply because he cannot yet distinguish his point of view from that of others through failure to co-ordinate or 'group' the points of view. Thus, both on the social and on the physical plane, he is egocentric through ignorance of his own subjectivity."

19. "Intellectual egocentricity is nothing more than a lack of co-ordination, a failure to 'group' relations with other individuals as well as with other objects."

20. "The initial absence of substantive objects, is the first example of the transition from primitive, total egocentricity to the final elaboration of an external universe."

21. "In accordance with a law we have already seen manifested in the infant and the young child, each new mental ability starts off by incorporating the world in a process of egocentric assimilation. Only later does it attain equilibrium through a compensating accommodation to reality. The intellectual egocentricity of adolescence is comparable to the egocentricity of the infant who assimilates the universe into his own corporal activity and to that of the young child who assimilates things into his own nascent thought (symbolic play, etc.). Adolescent egocentricity is manifested by belief in the omnipotence of reflection, as though the world should submit itself to idealistic schemes rather than to systems of reality. It is the metaphysical age par excellence; the self is strong enough to reconstruct the universe and big enough to incorporate it."

22. "We have seen how these successive constructions always involve a decentering of the initial egocentric point of view in order to place it in an ever-broader coordination of relations and concepts, so that each new terminal grouping further integrates the subject's activity by adapting it to an ever widening reality.

23. "Far from helping the subject distinguish between his own and other viewpoints, the egocentric attitude tends to encourage him to accept it without question as the only one possible."

24. "Each for himself, and all in communion with the 'Elder': such might be the formula of egocentric play."

25. "When assimilation outweighs accommodation (i.e., when the characteristics of the object are not taken into account except insofar as they are consistent with the subject's momentary interests) thought evolves in an egocentric or even autistic direction."

NOTES

[1]The structure of belief systems is at the center of the Lane-Converse debate. While the debate was initiated by the publications of The American Voter (Campbell, et. al., 1960) and Political Ideology (Lane, 1962), perhaps the most representative articles of the two sides in the debate are Converse's "The Nature of Belief Systems in Mass Publics", in Apter, 1964, and Lane's "Patterns of Political Belief", in Knutson, 1974.

[2]The revival of the issue occurred most notably with the publication of The Changing American Voter (Nie, et. al., 1976), although the issue was being raised even earlier by Bennett (1975), and Nie and Anderson(1974).

[3]Among the "revisits" are: Nie and Anderson, 1974; Sullivan, Pierson, and Marcus, 1978; Sullivan, Pierson, Marcus and Feldman, 1979.

[4]The best summaries of the controversy around The Authoritarian Personality are Christie and Johoda (1954) and Altemeyer (1981).

[5]There are some notable exceptions to this generalization, among which are Bennett, 1975; Axelrod, 1973; Best, 1973; and Connell, 1971.

[6]Examples are Nie, et. al., 1976; Stimson, 1975; Carmines and Stimson, 1982.

[7]Among the more notable books and articles are the following: Bishop, G., et. al., 1978 and 1979; Campbell, A., et. al., 1960; Converse, 1964; Field, J. and Anderson, R., 1969; Lane, 1962 and 1974; Bennett, L., 1975; Merelman, R., 1966; Nie, N. and Anderson, K., 1974; Nie, et. al., 1976; Nie and Rabjohn, J., 1979; Luttbeg, N., 1968; Puttnam, R., 1971; Shils, E., 1954; Stimson, J., 1975; Sullivan, et. al., 1978 and 1979; and Carmines and Stimson, 1982.

[8]Noteworthy methodological critiques are the following; Bennett, 1975; Achen, 1975; Smith, 1980; Bishop, et. al., 1978 and 1979; and Sullivan, et. al., 1978.

[9]The appropriate alternative is an operationalization of Piaget's concept of egocentrism. Piaget's work provides the best available model of cognitive structures and therefore Harvey, Hunt and Schroder's work (1961) deserves much greater recognition in political science than it has. Part of the problem of alternatives is that we do not have an adequate theoretical description of egocentrism which could be used as the basis for an operationalization of egocentrism. A major purpose of the following sections is to provide that statement.

[10]Bennett (1975) provides both the empirical and theoretical substantiations.

[11]The criticism developed here should demonstrate the futility of Nie, Verba and Petrocik's defense of their continued use of constraint on the grounds that they know of no alternative ideologies that would explain contradictory responses (p. 27). The problem with their approach is the complete lack of <u>any</u> psychological theory in that psychological forces are a central part of their endeavor, (pp. 6-7). Their approach is strictly political.

[12]It should be noted that the <u>parameters</u> are genetically determined, not the variation within the parameters. For more on this issue see Piaget, 1970.

[13]Unilateral respect for authority involves a total, uncritical acceptance of the point of view of authority such that one adopts authority's point of view whole-cloth. See Piaget, 1932, and various treatments by Kohlberg (e.g., 1973).

[14]An example might help to explain how assimilation and accommodation always occur together, and I shall use the example given by Flavell (as is true of all the concepts introduced, Flavell treated them in much greater detail and no reader can fail to profit from his exposition. In order for us to eat and thereby maintain ourselves, we must accommodate ourselves to the form in which the nourishment we require is found in the environment. At the simplest level, there must be some entry to our organism: the mouth. When we open our mouths to allow food to pass we are making an accommodation, just as when we move our jaws to chew the food. But simultaneously we are assimilating the food, preparing it for digestion as it passes through the mouth and as we chew. In addition, our digestive process must accommodate the foods' specific chemical and physical properties in order to assimilate it. Thus, through the assimilative process of nourishing ourselves we must simultaneously accommodate ourselves to the nourishment: "The organism must accommodate its functioning to the specific contours of the object it is trying to assimilate." (Flavel, 1963, p. 45).

[15]There is some question as to how one should exactly divide the system since concrete operational and formal operational thought are both forms of operational thought and therefore sometimes are thought of as forming subperiods of a single period. Even though the difference between sensori-motor and pre-operational thought is greater than between concrete and formal thought, it still makes sense to think in terms of the four-fold division portrayed here. On this issue I am deviating from Flavell who treats concrete and formal operations as subperiods of a single operatory period, rather than as periods proper. Piaget, himself, in 1962 distinguished intelligence in terms of "four great periods in the development of intelligence".

[16]Ages are all relative; the point is the order of succession, not the precise age at which the child develops the various structures. If ages were absolute we would be dealing with maturation, not the construction of intelligence and environment could be ignored.

[17]This is a point Vygotsgy also makes: "Development, as often happens, proceeds here not in a circle but in a spiral, passing through the same point each new revolution while advancing to a higher level." (Vygotsgy, 1978, p. 56).

[18]Freud's "Project for a Scientific Psychology", which is also referred to as "Psychology for Neurologists", in which Freud hoped to discover the neurological basis of psychological phenomena, can be found in the Standard Edition of the Complete Psychological Works of Sigmund Freud. The 1844 manuscripts can be found in Karl Marx and Frederick Engels: Collected Works, Progress Publishers, Moscow, volume 3, pp. 229-346.

[19]Perhaps this is an appropriate place to say egocentrism does not mean narcissism and the reader is advised not to think of egocentrism in the terms in which it is often used in common parlance. In Appendix A I have compiled a list of quotations in which Piaget employs the term egocentrism which may help to round out the meaning of the term. Specifically because of this confusion between the "scientific" use of terms and "popular" use of terms, Piaget, referring to the development of representational thought and the symbolism centering on the self, commented:

> "We no longer call it 'egocentric', as one of us once did, in deference to the criticisms from many psychologists who are still not familiar with the practice in the exact sciences of using a term only in accordance with the definitions proposed, irrespective of its popular meanings and associations." (Piaget and Inhelder, 1969, p. 61).

After absorbing this slap on the hands, perhaps we might prepare ourselves to employ the scientific practice. Thus, in deference to Piaget, I continue to use egocentrism as he developed the term; but not without some sense of conflict. I generally advocate using terms easily communicable to the uninitiated. My main reasoning on this is that the findings of science must be made accessible to the nonspecialist public. But since we have a perfectly adequate substitute in common use--narcissism--
for the use to which "egocentric" has come to be put, perhaps we might exercise a leadership function by proliferating a distinction between narcissism and egocentrism--the one an affective term, the other a cognitive one.

[20]For a definition of stage which applies well to Piaget's concept see Habermas, 1979, pp. 73-75. The reader is cautioned however that in the second characteristic Habermas (or his translator) refers to stages as "irreversible". Surely it should read "invariant" since there can be structural deterioration; e.g., see Feffer, 1967, and Looft, 1972. For other treatments of "stages" see Kohlberg, 1969, or Inhelder, 1953.

[21]There is a tendency among some interpreters of Piaget (e.g., Flavell) to treat development in a teleological manner; that is, there is a pre-defined goal toward which development proceeds. That is not my interpretation and it is not how I employ the word "goal". The "goals" are simply the empirically identifiable equilibrium points of a particular stage of development. To my way of thinking--and I believe it was Piaget's also--evolution is an open-ended process, even if the functions of adaptation and organization remain invariant. Thus, for example, in the area of moral reasoning there need not be simply three stages (as in Piaget's system) or six (as in Kohlberg's refined system). As others have suggested (e.g., Fishkin and Habermas) there seems to be now developing a seventh stage. The reason there can be no end state is that "progress"--that is, change--is insured by the dialectic between assimilation and accommodation. While stages, systems and structures have a certain strength, the seeds of transformation--inadequacies/lattice vacancies (see C. S. Smith in J. Wechsler, 1978)--are contained within each structure, propelling the organism, or the organization of intellect, to ever finer resolutions of, or adaptation to, reality; while reality itself is infinitely expandable and changed itself by our activity. Much of this can be accounted for in Godel's proof. At any rate, there is no static, fixed goal to development in any teleological sense.

[22]For more on role taking, see Feffer, 1959; Feffer and Gourevitch, 1960; Feffer and Suchotliff, 1966; Cowan, 1966; Flavell, 1966; Flavell, Botkin, Fry and Wright, 1968; Kohlberg, 1971; and Rottenberg, 1974.

[23]Since dogmatism as measured by the D scale is synchronic and egocentrism is diachronic, the exact correspondence will be difficult to establish; but there should be a correlation, for example, between stage four, law and order orientations on Kohlberg's scale of moral reasoning and dogmatism.

[24]See note 20 above.

[25]The best compilation of research on Piaget's theory is Modgil, S., 1974.

[26]One example is the research on student activists during the sixties and early seventies. See Fishkin, Keniston, and McKinnon (1973); Haan, N. (1968); Kohlberg, L. (1964); and patterson, J. (1975).

[27]For example, the Baldwin effect on the level of evolution--see Piaget, 1976/78.

[28]Again, there are exceptions. See note 5 above. It should also be remembered that I am speaking of political scientists, not psychologists.

[29]The gradual legitimation over the last ten years of political psychology as a discipline along with the establishment of the International Society of Political Psychology, Yale's Psychology and Politics program, and the proliferation of political psychology courses should help this needed process.

[30]Naturally I would be happy to hear from anyone already working in the area or interested in doing so.

[31]See Adelson's "The Political Imagination of the Young Adolescent" Daedelus, vol. 100, for the best summary of his work along with Adelson and O'Neil (1966); Adelson, Green and O'Neil (1969); Adelson and Beall (1970); and Gallatin and Adelson (1970).

[32]See Ward (1981) and Wason and Johnson-Laird (1972).

[33]Naturally, younger subjects will not be able to adequately respond to such general questions and we will probably have to develop alternatives to the typical interview situation. Such alternatives might include the use of dolls or games. If we were exploring the idea of equality, for example, a child could be presented with a group of dolls and asked to explain how the dolls would decide a question such as how a jar of candy should be divided. The experimenter could probe at each stage whether or not a decision could be reached by other means, which means was best, and so forth. We would then have information not only on preferred methods of decision-making and distributions of resources, but how many alternatives and what kinds were entertained. I suspect that the modes of decision-making, the preferences and the number of alternatives entertained vary systematically across different age groups.

[34]For example, the following statement is from Lane's interview with Kuchinsky, one of the subjects interviewed for Political Ideology. The response is to the question which opens the interview asking, "What are the most important problems facing America today?":

> "Well, problems today I believe, uh, we have a lot of problems today, and us, in this country concerning the other side, uh, which I think, this country's really gone over-board on a lot of things. I mean in throwing a lot of money--a situation which is hurting us quite a bit here. I mean, which I think the working class of people should be getting a little more here than they're actually are. I mean, right at this time, even now, ah, I mean, ah, which is, ah a tough situation here right in this development itself. I mean, we're even going up in the rent and stuff like that. It's really hurting an awful lot of people....."

The response goes on without any attention to causal relationships. It is simply a recounting of what appears to perception in the process of everyday life.

REFERENCES

Achen, C. (1975) "Mass Political Attitudes and the Survey Response", American Political Science Review, vol. 69, pp. 1218-1231.

Adelson, J. and O'Neil, R. (1966), "The Growth of Political Ideas in Adolescence: The Sense of Community", Journal of Personality and Social Psychology, vol. 4, pp. 295-306.

Adelson, J., Green, and O'Neil, R. (1969), "The Growth of the Idea of Law in Adolescence", Developmental Psychology, vol. 1, pp. 327-332.

Adelson, J. and Beall (1970), "Adolescent Perspectives on Law and Government", Law and Society Review, vol. 2, pp. 495-504.

Adelson, J. (1971), "The Political Imagination of the Young Adolescent", Daedelus, vol. 100, pp. 1013-1050.

Adorno, T.W., Frenkel-Brunswik, E., Levinson, D.J., and Sanford, R.N. (1950), The Authoritarian Personality, Harper.

Altemeyer, B. (1981), Right-Wing Authoritarianism, University of Manitoba Press.

Apter, D. (1964), Ideology and Discontent, Free Press.

Axelrod, R. (1973), "Schema Theory: An Information Processing Model of Perception and Cognition", American Political Science Review, vol. 67, pp. 1248-1266.

Bennett, W.L. (1975), The Political Mind and the Political Environment, Lexington Books.

Best, J. (1973), Public Opinion: Micro and Macro, Dorsey Press.

Bieri, J.; Atkins, A.; Briar, S.; Leaman, R.L.; Miller, H.; and Tripodi, T. (1966), Clinical and Social Judgment: The Discrimination of Behavioral Information, John Wiley and Sons, Inc.

Bishop, G.F.; Tuchfarber, A.J.; Oldendick, R.W.; and Bennett, S. (1979), "Questions About Question Wording: A Rejoinder to Revisiting Mass Belief Systems Revisited", American Journal of Political Science, vol. 23, pp. 187-192.

Bishop, G.F.; Tuchfarber, A.J.; Oldendick, R.W. (1978), "Change in the structure of American Political Attitudes: The Nagging Question of Question-Wording", American Journal of Political Science, vol. 22, pp. 250-269.

Campbell, A.; Converse, P.; Miller, W.; and Stokes, D. (1960), The American Voter, Wiley.

Carmines, E. and Stimson, J. (1982), "Racial Issues and the Structure of Mass Belief Systems", Journal of Politics, vol. 44, pp. 2-20.

Christie, R. and Johoda, M. (eds.) (1954), Studies in the Scope and Method of The Authoritarian Personality, Free Press.

Connell, R.W. (1971) The Child's Construction of Politics, Melbourne University Press.

Converse, P. (1964), "The Nature of Belief Systems in Mass Publics", in Apter, 1964.

Cowan, P. (1966), "Cognitive Egocentrism and Social Interaction in Children", American Psychologist vol. 21, p. 623.

Elkind, D. (1967), "Egocentrism in Adolescence", Child Development, vol. 38, pp. 1025-1034.

Feffer, M. (1959), "The Cognitive Implications of Role-Taking Behavior", Journal of Personality, vol. 27, pp. 152-168.

Feffer, M. and Gourevitch, V. (1960), "Cognitive Aspects of Role-Taking in Children", Journal of Personality, vol. 28, pp. 384-396.

Feffer, M. (1967), "Symptom Expression as a Form of Primitive Decentering", Psychological Review, vol. 174, pp. 152-168.

Feffer, M. (1970), "A Developmental Analysis of Interpersonal Behavior", Psychological Review, vol. 177, pp. 197-214.

Feffer, M. and Suchotliff, L. (1966), "Decentering Implications of Social Interactions", Journal of Personality and Social Psychology, vol. 4, #4, pp. 415-422.

Fishkin, J.; Keniston, K.; and McKinnon, K. (1973), "Moral Reasoning and Political Ideology", Journal of Personality and Social Psychology, vol. 27, pp. 109-119.

Flavell, J.H. (1963), The Developmental Psychology of Jean Piaget, Princeton, Van Nostrand.

Flavell, J.H. (1966), "Role-Taking and Communication Skills in Children", Young Children, vol. 21, pp. 164-177.

Flavell, Botkin, Fry, Wright, eds. (1968), The Development of Role-Taking and Communicative Skills in Children, Wiley.

Freud, S. (1953-74), The Standard Edition of the Complete Psychological Works, Hogarth Press.

Gallatin, J. and Adelson, J. (1970), "Individual Rights and the Public Good: A Cross-National Study of Adolescence", Comparative Political Studies, vol. 2, pp. 226-244.

Godel, K. (1931), "On Formally Undecidable Propositions of Principia Mathematica and Related Systems", see: Ernest Nagel and James Newman, Godel's Proof, New York University Press, 1960.

Habermas, J. (1979), "Moral Development and Ego Identity", in Communication and the Evolution of Society, Beacon.

Haan, N. (1968), "Moral Reasoning of Young Adults: Political-Social Behavior, Family Background, and Personality Correlates", Journal of Personality and Social Psychology, vol. 10, #3, pp. 183-201.

Harvey, O.J.; Hunt, D.E.; and Schroder, H.M. (1961), Conceptual Systems and Personality Organization, John Wiley and Sons.

Inhelder, B. (1953), "Criteria of the Stages of Mental Development", in Tanner, S.M. and Inhelder, B. (eds.), Discussion on Child Development, Tavistock, (1956), pp. 75-107.

Inhelder, B. and Piaget, J. (1964), The Early Growth of Logic in the Child, Routledge and Kegan, Paul.

Inhelder, B. and Piaget, J. (1958), The Growth of Logical Thinking from Childhood to Adolescence, Basic Books.

Knutson, J. (1974), The Handbook of Political Psychology, Jossey-Bass.

Kohlberg, L. (1964), "The Development of Moral Character and Ideology", in Hoffman, M. and L. (eds.), Review of Child Development Research, Russell Sage.

Kohlberg, L. (1969), "Stage and Sequence: The Cognitive-Developmental Approach to Socialization", in Goslin, D. (ed.), Handbook of Socialization Theory and Research, Rand McNally.

Kohlberg, L. (1971), "From Is to Ought: How to Commit the Naturalistic Fallacy and Get Away with it in the Study of Moral Development", in Mischel, T. (ed.) Cognitive Development and Epistemology, Academic Press.

Kohlberg, L. (1973), Collected Papers on Moral Development and Moral Education, Moral Education and Research Foundation.

Lane, R.E. (1962), Political Ideology, Free Press.

Lane, R.E. (1974), "Patterns of Political Belief", in Knutson, 1974.

Lee, D. (1959), Freedom and Culture, Prentice-Hall.

Looft, W. and (1971), "Egocentrism and Social Interaction in Young and Old Adults", Aging and Human Development, vol. 2, pp. 21-28.

Looft, W. (1972), "Egocentrism and Social Interaction Across the Life Span", Psychological Bulletin, vol. 78, pp. 73-92.

Loye, D. (1977), The Leadership Passion: A Psychology of Ideology, Jossey-Bass Publishers.

Luttbeg, N. (1968), "The Structure of Beliefs Among Leaders and the Public", Public Opinion Quarterly, vol. 32, #3.

Mannheim, K. (1936), Ideology and Utopia, Harcourt, Brace and World.

Marx, K. and Engels, F., (1975-79), Collected Works, Progress Publishers.

Merelman, R. (1966), "The Development of Political Ideology: A Framework for the Analysis of Political Socialization", American Political Science Review, vol. 68, #3, pp. 750-767.

Modgil, S. (1974), Piagetian Research: Handbook of Recent Studies, NFER Publishing Company Ltd.

Nie, N. and Anderson, K. (1974), "Mass Belief Systems Revisited: Political Change and Attitude Structure", Journal of Politics, vol. 36, pp. 540-590.

Nie, N.; Verba, S.; and Petrocik, J. (1976), The Changing American Voter, Harvard University Press.

Nie, N. and Rabjohn, J. (1979), "Revisiting Mass Belief Systems Revisited Or Doing Research is Like Watching a Tennis Match", American Journal of Political Science, vol. 23, pp. 139-175.

Patterson, J. (1975), "Moral Development and Political Thinking: The Case of Freedom of Speech", paper presented, Yale University, Spring, 1975.

Piaget, J. (1926), The Language and Thought of the Child, Routledge and Kegan Paul.

Piaget, J. (1928), Judgment and Reasoning in the Child, Routledge and Kegan Paul.

Piaget, J. (1929), The Child's Conception of the World, Routledge and Kegan Paul.

Piaget, J. (1930), The Child's Conception of Physical Causality, Routledge and Kegan Paul.

Piaget, J. (1932/65), The Moral Judgment of the Child, Free Press.

Piaget, J. (1936-52), The Origins of Intelligence in Children, International Universities Press.

Piaget, J. (1937/55), The Construction of Reality in the Child, Routledge and Kegan Paul.

Piaget, J. (1941/52), The Child's Conception of Number, Routledge and Kegan Paul.

Piaget, J. (1946/51), Play, Dreams and Imitation in Childhood, Routledge and Kegan Paul.

Piaget, J. (1946/69), The Child's Conception of Time, Routledge, and Kegan Paul.

Piaget, J. (1946/70), The Child's Conception of Movement and Speed, Routledge and Kegan Paul.

Piaget, J. (1947/50), The Psychology of Intelligence, Routledge and Kegan Paul, all quotations from Littlefield, Adams, and Co. edition.

Piaget, J. and Inhelder, B. (1948/56), The Child's Conception of Space, Routledge and Kegan Paul, all quotations from the Norton edition.

Piaget, J. Inhelder, B. and Szeminska, A. (1948/60), The Child's Conception of Geometry, Routledge and Kegan Paul.

Piaget, J. (1953), Logic and Psychology, Manchester University Press.

Piaget, J. and Inhelder, B. (1963), "Intellectual Operations and Their Development", in Experimental Psychology: Its Scope and Method, vol. 7, Chapter 24, Fraisse and Piaget, eds., Basic Books.

Piaget, J. (1964/68), Six Psychological Studies, Vintage.

Piaget, J. and Inhelder, B. (1966/69), The Psychology of the Child, Harper.

Piaget, J. (1968/71), Structuralism, Harper and Row.

Piaget, J. (1968), "Stages of Intellectual Development in the Child", in Wason and Johnson-Laird, (1968), Thinking and Reasoning, Penguin.

Piaget, J. (1970), "Piaget's Theory", in Mussen, P. (ed.), Manual of Child Psychology.

Piaget, J. (1971), Genetic Epistemology, Norton.

Piaget, J. (1971a), Biology and Knowledge, University of Chicago Press.

Piaget, J. (1972), Psychology and Epistemology, Viking.

Piaget, J. (1973), Main Trends in Psychology, Harper.

Piaget, J. (1973a), Main Trends in Inter-disciplinary Research, Harper-Row.

Piaget, J. (1973b), The Child and Reality, Viking.

Piaget, J. (1975/77), The Development of Thought: Equilibration of Cognitive Structures, Viking.

Piaget, J. (1976), The Grasp of Consciousness, Harvard University Press.

Piaget, J. (1976a), To Understand is to Invent, Penguin.

Piaget, J. (1974), The Place of the Sciences of Man in the System of Sciences, Harper and Row.

Piaget, J. (1978), Success and Understanding, Harvard University Press.

Piaget, J. (1978a), Behavior and Evolution, Pantheon.

Piaget, J. (1977), Understanding Causality, Norton.

Puttnam, R. (1971), "Studying Elite Political Culture: The Case of Ideology", American Political Science Review, vol. 65, #3, pp. 651-682.

Rokeach, M. (1960), The Open and Closed Mind, Basic Books.

Rottenberg, M. (1974), "Conceptual and Methodological Notes on Affective and Cognitive Role-Taking (Sympathy and Empathy)", Journal of Genetic Psychology, vol. 125.

Rubin, K.; Attewell, P.; Tierney, M.; and Tumolo, P.; "Development of Egocentrism and Conservation Across the Life Span", Developmental Psychology, vol. 9, #3.

Rubin, K. (1973), "Egocentrism in Childhood", Child Development, vol. 44, pp. 102-110.

Rubin, K. (1974), "The Relationship Between Spatial and Communicative Egocentrism in Children and Young and Old Adults", Journal of Genetic Psychology, vol. 125, pp. 295-301.

Shils, E. (1954), "Authoritariansim: Right and Left", in Christie and Johoda, 1954.

Smith, Eric R.A.N. (1980), "The Levels of Conceptualization: False Measures of Ideological Sophistication", American Political Science Review, vol. 74, #3, pp. 685-696.

Stimson, J. (1975), "Belief Systems: Constraint, Complexity, and the 1972 Election", American Journal of Political Science, vol. 19, pp. 383-418.

Sullivan, J.L.; Pierson, J.E.; and Marcus, G.E. (1978), "Ideological Constraint in the Mass Public: A Methodological Critique and Some New Findings", American Journal of Political Science, vol. 22, pp. 233-249.

Sullivan, J.L.; Pierson, J.E.; Marcus, G.E.; and Feldman, S. (1979), "The More Things Change, the More They Stay the Same: The Stability of Mass Belief Systems", American Journal of Political Science, vol. 23, pp. 176-186.

Vygotsky, L.S. (1978), Mind in Society: The Development of Higher Psychological Processes, Harvard University Press.

Walzer, M. (1977), Just and Unjust Wars, Basic Books.

Ward, D. (1981), Ideology and Generations: An Intergenerational Re-Study of Robert Lane's Political Ideology, unpublished Ph.D. dissertation, Yale University.

Wason, P.C. and Johnson-Laird, P.N. (1972), Psychology of Reasoning: Structure and Content, Harvard University Press.

Wechsler, J. (ed.) (1978), On Aesthetics in Science, MIT Press.